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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/676,875	09/29/2000	Bruce Randall Cook	ECB-0004	3306

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EXAMINER

GRIFFIN, WALTER DEAN

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 05/10/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/676,875

Applicant(s)

COOK ET AL.

Examiner

Walter D. Griffin

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-- Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 April 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 9-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 9-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

The objection to the abstract and the rejections under 35 USC 112, second paragraph, as described in paper no. 2 have been withdrawn in view of the amendment filed on April 3, 2002.

Claim Objections

Claim 1 is objected to because of the following informalities: The word "when" should apparently be inserted after the word "wherein" in each of lines 7 and 9 of claim 1. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

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4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-4 and 9-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harandi (5,554,275).

The Harandi reference discloses a process for desulfurizing an olefinic hydrocarbon feed such as an FCC crackate by passing a liquid hydrocarbon into a stripper having a bed of hydrodesulfurization catalyst particles and contacting the liquid with the catalyst bed while passing a stripping gas (i.e., hydrogen) into the stripper. This FCC crackate is equivalent to a naphtha. The catalyst may be a Group VI and VIII metal catalyst such as cobalt-molybdenum on a support such as alumina. This catalyst would necessarily be sulfided through its use with a sulfur-containing hydrocarbon feed. See col. 1, lines 7-62, col. 2, lines 19-24, and col. 3, lines 12-37.

The Harandi reference does not disclose the presence of mercaptans in the hydrocarbon feed, does not disclose the stripping gas composition of claim 4, and does not disclose a concurrent system.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Harandi by utilizing a feed that contains mercaptans in the concentrations claimed because mercaptans fall within the general class of

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organic sulfur compounds disclosed by Harandi and therefore would be expected to be effectively converted in the disclosed process.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Harandi by utilizing a stripping gas having the composition as in claim 4 because any concentration of hydrogen would be expected to promote the hydrodesulfurization reactions.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Harandi by utilizing a concurrent system because as long as there is contact between the hydrogen, feed, and catalyst, regardless of the direction of contacting, an effective process would be expected to result.

Claims 5-7 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harandi (5,554,275) as applied to claim 1 above, and further in view of Jossens et al. (6,228,254).

As discussed above, the Harandi reference does not disclose the use of a hydrodesulfurized feed or the step of hydrodesulfurizing a hydrocarbon to produce the feed.

The Jossens reference discloses a mild hydrotreatment that results in a hydrotreated stream that still contains mercaptans. These mercaptans are then removed by a further treatment. See col. 1, line 65 through col. 5, line 15.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Harandi by hydrotreating a hydrocarbon to produce the feed as suggested by Jossens because the initial mild hydrotreating of Jossens retains olefin content while increasing mercaptan content.

Response to Arguments

The argument that the claimed olefinic feed stream is outside the teaching of Harandi is not persuasive because in column 1, lines 51-58, Harandi discloses that the feed contains olefins. Therefore, the claimed feed is indistinguishable from that disclosed by Harandi.

The argument that the Jossens reference teaches away from the decomposition of mercaptans in a first step is not persuasive because such a limitation is not claimed. The Jossens reference discloses a hydrotreating process that removes a portion of the sulfur present in the feed. See col. 2, lines 11-16. The hydrotreating also results in a feed that contains mercaptans. Therefore, the examiner maintains that the Jossens reference discloses hydrodesulfurization as claimed and also discloses sulfur removal as claimed.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,


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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter D. Griffin whose telephone number is 703-305-3774. The examiner can normally be reached on Monday-Friday 6:30 to 4:00 with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marian Knode can be reached on 703-308-4311. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0651.


Walter D. Griffin
Primary Examiner
Art Unit 1764

WG
May 7, 2002